

Algebra II  
Unit 7 Test Review

Name \_\_\_\_\_  
Date \_\_\_\_\_

I. Classify the equations as linear, quadratic, or neither.

1)  $y = 2x + 7$  \_\_\_\_\_ 2)  $y = 2x^3 + 7x + 4$  \_\_\_\_\_

3)  $y = 5x^2$  \_\_\_\_\_ 4)  $2x + 3y = -6$  \_\_\_\_\_

5)  $x^2 + y^2 = 9$  \_\_\_\_\_ 6)  $y = (2x - 3)^2$  \_\_\_\_\_

II. Complete the table of values:

7)  $y = 2x^2 - 4$

x	-3	-2	-1	0	1	2	3
y							

8)  $f(x) = -3x^2 + 12x + 3$

x	-3	-2	-1	0	1	2	3
f(x)							

III. Find the unknown value of the quadratic.

9)  $y = ax^2 + 3x - 2$  (3, -11)      a = \_\_\_\_\_

10)  $y = x^2 + 4x + c$  (1, -8)      c = \_\_\_\_\_

$$\boxed{a} \quad y = 2x^2 + 6x - 4 \quad \boxed{b} \quad y = x^2 - 8 \quad \boxed{c} \quad y = -\frac{1}{4}x^2 + 2x + 1 \quad \boxed{d} \quad y = -8x^2$$

IV. Answer the following questions about the above quadratics.

- 11) Which quadratic is the widest?
- 12) Which quadratic is the narrowest?
- 13) Which quadratic(s) open up?
- 14) Which quadratic(s) have a maximum value?
- 15) Which quadratic has a vertex of (0,0)? (4,5)?
- 16) Which quadratic has a y-intercept of (0,-4)?

V. For each of the following quadratics functions

- a) State whether the graph opens upwards or downwards
- b) Give the y-intercept
- c) Find the axis of symmetry
- d) State whether the graph will have a minimum or maximum value
- e) Find the minimum or maximum value
- f) Give the vertex
- g) Give the point of symmetry
- h) Find the zeros
- i) Graph the quadratic

17)  $y = 2x^2 - 2$

18)  $y = -x^2 + 2x + 8$

19)  $y = 2x^2 + 5x - 3$

20)  $y = -x^2 + 2x$

21)  $y = \frac{1}{3}x^2 + 2$